

**BNL**Milestone

A3 beamline shielding complete  
 Review of initial carbon target  
 Review of initial liquid-metal target  
 Begin 20-T pulsed solenoid mech. design  
 A3 radiation safety review complete  
 Preliminary review of liquid-Hg jet with NHMFL  
 A3 beamline commissioning complete  
 Complete Feasibility Study-II  
 Solid target delivered  
 Liquid-metal target delivered  
 Begin target test program  
 Complete Snowmass review document  
 Liquid-Hg jet test plan complete  
 Begin test of liquid-Hg jet in 20-T solenoid at NHMFL  
 Preliminary design of AGS 6-bunch extraction kicker  
 Complete 20-T pulsed solenoid mech. design  
 Add emittance exchange and other features to ICOOL code  
 Complete target simulation studies

<u>Date</u>	<u>Deliverable</u>
3/1/01	Inspection
3/1/01	Approval to fabricate
3/15/01	Approval to fabricate
4/2/01	Contract awarded
4/16/01	Operations clearance
4/16/01	Approval to fabricate
4/30/01	Report
4/30/01	Final report
5/1/01	Inspection
5/15/01	Inspection
6/1/01	First target exposed to beam
7/2/01	Final report prepared
7/30/01	Approval to test
9/3/01	First experiment begins
9/17/01	Report prepared
9/28/01	Final design report
9/28/01	Prepare MC note
9/28/01	Prepare MC note

**FNAL**Milestone

Lab G operational  
 Begin absorber window pressure tests  
 Begin open-cell RF test program  
 Complete materials study for grid tubes  
 Complete thermal and mechanical design of 201-MHz cavity  
 Complete simulation studies for Feasibility Study-II  
 Absorber test area ready  
 Complete conceptual design of 201-MHz power coupler  
 Complete conceptual design of grid tube assembly  
 Begin cavity tests at high power in Lab G (FNAL)  
 Test prototype 3 fast timing detector in FNAL Lab G  
 Complete conceptual design of 201-MHz tuner  
 Bench test of first absorber prototype  
 Begin preparation of 201-MHz power supply  
 Complete initial fabrication tests of model grid tube assembly

<u>Date</u>	<u>Deliverable</u>
2/19/01	Inspection
2/26/01	Inspection
3/19/01	Start of high-power conditioning
3/30/01	Prepare MC note
4/30/01	Prepare MC note
4/30/01	Final report prepared
6/18/01	Inspection
6/22/01	Prepare MC note
6/22/01	Prepare MC note
6/29/01	Inspection
6/29/01	Prepare report
8/31/01	Prepare MC note
9/28/01	Prepare MC note
9/28/01	Parts acquired
9/28/01	Inspection

**LBNL**Milestone

Complete flat window finite-element analysis  
 Begin fabrication of 805 MHz high-power window cavity  
 Analyze RF system requirements for Feasibility Study-II  
 Induction linac interim design completed for Feasibility Study-II  
 Induction linac SC solenoid interim design completed for Feasibility Study-II  
 Cooling channel cryostat interim design completed for Feasibility Study-II  
 Complete baseline window design for Feasibility Study-II  
 Order Be windows with anti-multipactor coating  
 Order stepped windows for testing  
 Complete cavity fabrication at U-Mississippi  
 Begin mechanical design of 201 MHz RF cavity, incl. coupler  
 Test high-power cavity at low power (LBNL)  
 Test stepped windows with halogen lamp and low-power cavity  
 Induction linac final design and cost estimate completed  
 Induction linac SC solenoid final design completed for Feasibility Study-II  
 Begin cavity tests at high power in Lab G (FNAL)  
 Complete conceptual design for 201-MHz sized test solenoid  
 Study multipactor and breakdown in Lab G (FNAL)  
 Test 201-MHz windows with halogen lamp  
 Test 805 MHz windows at high power in Lab G (FNAL)  
 Complete mechanical design of 201-MHz test cavity

<u>Date</u>	<u>Deliverable</u>
12/1/00	Prepare MC note
12/22/00	Inspection
12/22/00	Interim report
1/30/01	Interim report
1/30/01	Interim report
1/30/01	Interim report
2/1/01	Interim report
2/28/01	P.O. initiated
2/28/01	P.O. initiated
4/2/01	Inspection
4/2/01	Inspection
4/30/01	Prepare report
4/30/01	Prepare MC note
4/30/01	Final report prepared
4/30/01	Final report prepared
6/29/01	Inspection
7/2/01	Prepare MC note
8/31/01	Prepare MC note
8/31/01	Prepare MC note
9/28/01	Prepare MC note
9/28/01	Prepare MC note

**ANL**Milestone

Complete Feasibility Study-II diagnostics definition  
 Complete study of cavity x-rays and dark currents  
 Assess liquid-metal jet fragmentation from beam heating  
 Complete initial study of emittance exchange  
 Develop approach to analytic 6D cooling theory  
 Examine principles of emittance exchange  
 Model shock hydrodynamics of solid and liquid targets

<u>Date</u>	<u>Deliverable</u>
4/30/01	Final report prepared
6/29/01	Prepare MC note
6/29/01	Prepare MC note
9/28/01	Prepare MC note
9/28/01	Prepare MC note
9/28/01	Prepare MC note
9/28/01	Prepare MC note

**Illinois Institute of Technology**Milestone

Hire postdoctoral researcher  
 Complete Feasibility Study-II simulations  
 Complete Snowmass document simulations  
 Document cooling simulation studies

<u>Date</u>	<u>Deliverable</u>
1/31/01	Person in place
4/30/01	Final report prepared
7/2/01	Final report prepared
12/21/01	MUCOOL notes submitted

**U-Mississippi**Milestone

Incorporate cooling ring geometry into ICOOL  
 Complete high-power 805-MHz cavity fabrication  
 Test resistivity of annealed beryllium at 77 K  
 Document expected performance of Cerenkov detectors in cooling channel and ring

<u>Date</u>	<u>Deliverable</u>
3/30/01	Prepare MC note
4/2/01	Inspection
8/31/01	Prepare MC note
9/28/01	Prepare MC note

**Princeton**Milestone

Review of initial liquid-metal target  
 Begin 20-T pulsed solenoid mech. design  
 Preliminary review of liquid-Hg jet with NHMFL  
 Complete Feasibility Study-II  
 Liquid-metal target delivered  
 Begin target test program  
 Fabricate fast flux monitor for secondaries (*m/p*)  
 Complete Snowmass review document targetry writeup  
 Liquid-Hg jet test plan complete  
 Continue study of plasma modes in high resistance medium  
 Begin test of liquid-Hg jet in 20-T solenoid at NHMFL  
 Complete 20-T pulsed solenoid in-house mech. design studies  
 Complete liquid-jet simulation studies

<u>Date</u>	<u>Deliverable</u>
3/16/01	Approval to fabricate
4/2/01	Contract awarded
4/16/01	Approval to fabricate
4/30/01	Final report
5/15/01	Inspection
6/1/01	First target exposed to beam
6/1/01	Inspection
7/2/01	Final report prepared
7/30/01	Approval to test
8/1/01	Prepare MC note
9/5/01	First experiment begins
9/28/01	Final report prepared
9/28/01	Prepare MC note

**UCB**Milestone

Complete study of helical cooling  
 Complete simulations for Feasibility Study-II  
 Benchmark analytic theory for phase rotation channel with ICOOL  
 Complete simulations for Snowmass

<u>Date</u>	<u>Deliverable</u>
3/2/01	Prepare MC note
4/30/01	Final report prepared
6/1/01	Prepare MC note
7/2/01	Summary report prepared

**UCLA**Milestone

Assemble prototype 1 fast timing detector  
 Complete Plan C study for Feasibility Study-II  
 Test prototype 1 with fast laser  
 Assemble prototype 2 fast timing detector  
 Complete upstream RF study for Feasibility Study-II  
 Analyze MUSCAT data from run at TRIUMF  
 Complete study of Neutrino Factory detector at WIPP site  
 Test prototypes 1 and 2 with cosmic rays  
 Test prototype 3 in FNAL Lab G  
 Complete integrated simulation of emittance exchange scheme

<u>Date</u>	<u>Deliverable</u>
1/31/01	Inspection
2/1/01	Interim report
2/28/01	Prepare report
3/30/01	Prepare report
4/30/01	Final report prepared
4/30/01	Inspection
5/30/01	Prepare MC note
5/31/01	Prepare report
6/29/01	Prepare report
8/31/01	Prepare MC note

**ORNL**Milestone

Complete C target thermal/stress modeling

<u>Date</u>	<u>Deliverable</u>
1/26/01	Analysis report

Complete Feasibility Study-II initial study	1/30/01	Interim report
Complete C sublimation test	4/30/01	Test report
Complete Feasibility Study-II	4/30/01	Final report and cost estimate
Complete C target beam tests at BNL	7/2/01	Test report

**NHMFL**Milestone

	<u>Date</u>	<u>Deliverable</u>
Fix target solenoid design requirements and criteria	12/22/00	Design specification document
Complete conceptual designs for target/cooling solenoids	1/31/01	Conceptual design document
Initial description of design alternatives	2/16/01	Prepare MC note
Initial cost estimate completed	3/2/01	Interim report
Draft Feasibility Study-II report completed	3/16/01	Interim report
Final Feasibility Study-II report completed	4/30/01	Final report prepared
Complete preliminary design for 201-MHz cooling test solenoid	9/28/01	Prepare MC note

**Jlab**Milestone

	<u>Date</u>	<u>Deliverable</u>
Complete initial design of linac system for Feasibility Study-II	1/30/01	Interim report
Complete initial design of RLA system for Feasibility Study-II	3/16/01	Interim report
Complete final design and cost estimate of acceleration system for Feasibility Study-II	4/30/01	Final report prepared

**Cornell**Milestone

	<u>Date</u>	<u>Deliverable</u>
Complete initial design of SCRF system for Feasibility Study-II	1/30/01	Interim report
Complete final design and cost estimate of SCRF system for Feasibility Study-II	4/30/01	Final report prepared

**U. of Iowa**Milestone

	<u>Date</u>	<u>Deliverable</u>
Final design review for prototype detector	4/2/01	Approval to fabricate
Fabricate prototype SEM detector	8/1/01	Inspection
Test detector prototype in beam at ANL or FNAL	9/28/01	First prototype exposed to beam